2008

Habitat characteristics influencing Sandhill crane nest site selection

Anne E. Lacy
International Crane Foundation

Su Liying
International Crane Foundation

HABITAT CHARACTERISTICS INFLUENCING SANDHILL CRANE NEST SITE SELECTION

ANNE E. LACY, International Crane Foundation, E-11376 Shady Lane Road, Baraboo, WI 53913-0447, USA
SU LIYING, International Crane Foundation, E-11376 Shady Lane Road, Baraboo, WI 53913-0447, USA

Abstract: The breeding population of greater Sandhill cranes (*Grus canadensis tabida*) in Wisconsin has greatly increased since the population was nearly extirpated in the mid-1930's (Henika 1936). The International Crane Foundation (ICF) has been studying these birds for over 10 years in an area with one of the highest density of breeding cranes in the Midwest; we have calculated a nesting density of over 5 pairs/km^2 (ICF unpublished data). Prior to this study, little was known about the habitat characteristics that may be influencing nest site selection.

We conducted nest surveys by helicopter during the last week of April of 2001-2003 in a 6500 ha study area in Marquette, Adams and Columbia counties in south central Wisconsin. Data from nest surveys in 2002 (n = 51) and 2003 (n = 63) were used to identify landscape and habitat characteristics that describe nest site selection in each wetland complex surveyed. Data was calculated for real nests and random points within each wetland at two levels; at the wetland level and the nest site level. At the wetland level we calculated landscape characteristics such as the number and type of habitat patches and amount of edge. For each nest point we calculated distance to each of the 13 habitat types. Nest and random points were compared to discern what variables best describe nest selection.

Thirteen separate wetland complexes were identified, ranging in size from 280 ha (where 13 nests were found) to 1 ha (where 1 nest was found). Some of the nests within these complexes were clustered, with a few active nests only 10 m apart. The type and distance to the nearest upland (i. e. agriculture vs. forest) differed with each wetland complex, as the shape of each wetland (long and narrow, or round) varied along with the land use in the study area. The type and amount of habitat patches in each wetland also had an effect on the number and placement of crane nests. However, we have had difficulty showing quantitatively exactly which variables influence the nest site selection of these birds. Wetland size was consistently found to be the variable that influences nest selection the most, as the larger the wetland was, the more nests were found.

There are 3 major components to the ecology of sandhill cranes that has kept us from effectively detecting what variables best describe actual selection of sites for nesting by cranes – there is a strong social component (they are very territorial and influence each others' choice); they are long-lived and remain territorial for a long time so there is a time lag between changes in the landscape and how that is reflected in territory changes; and this area is most likely at carrying capacity, so both optimal and suboptimal nesting sites are probably occupied.

LITERATURE CITED

Henika, F. S. 1936. Sandhill Cranes in Wisconsin and other lake states. Proceedings of the North American Wildlife Conference 1:644-646.

PROCEEDINGS OF THE NORTH AMERICAN CRANE WORKSHOP 10:165

Key words: breeding birds, eastern greater sandhill crane, *Grus canadensis tabida*, nest site selection, spatial scale, Wisconsin.